Secondary Vertex Finding w/ RAVE

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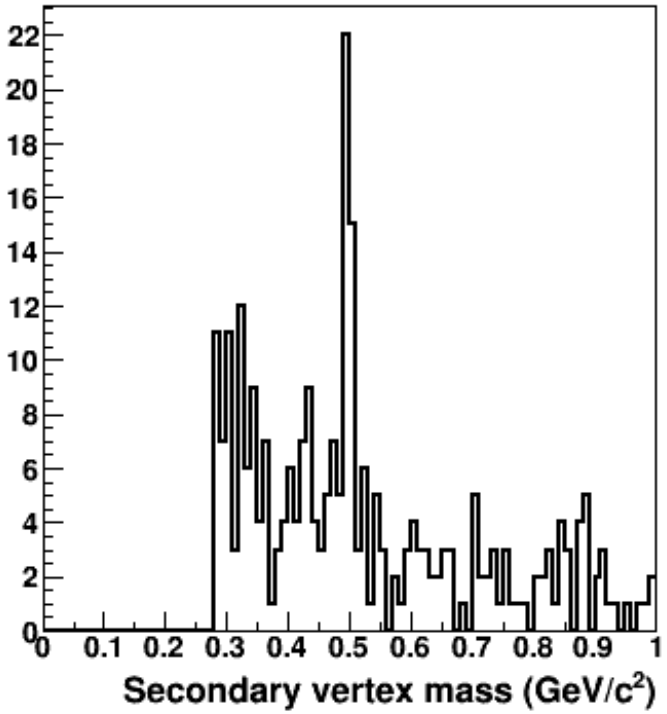
Additional udsg-jet rejection

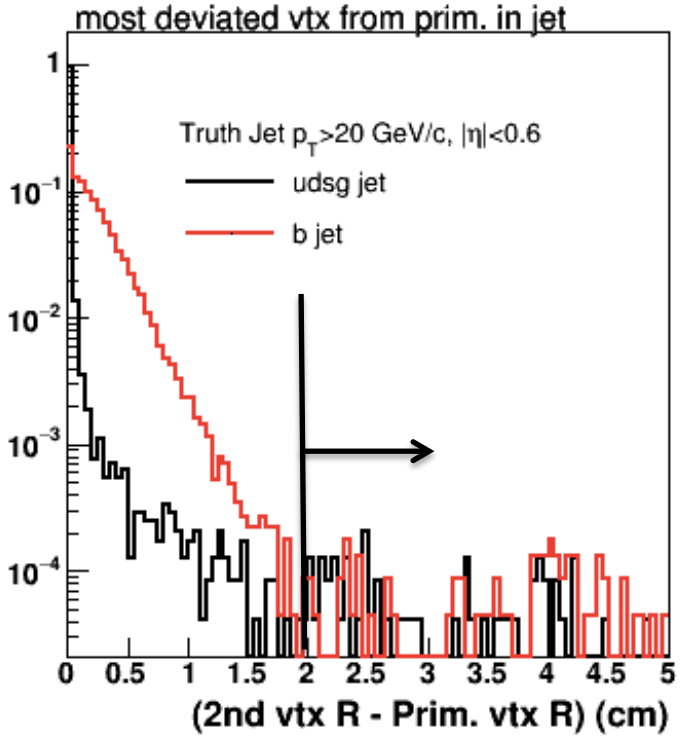
- MAPS+IT+TPC
  - run udsg/c/b-jets separately for this study
  - use Jin's tagging module

- K0 tagging / maximum deviation cut

secondary vertex mass w/ reco. p
reject vertex in 0.48<vertex mass<0.52 GeV



reject vertex which deviation > 2 cm

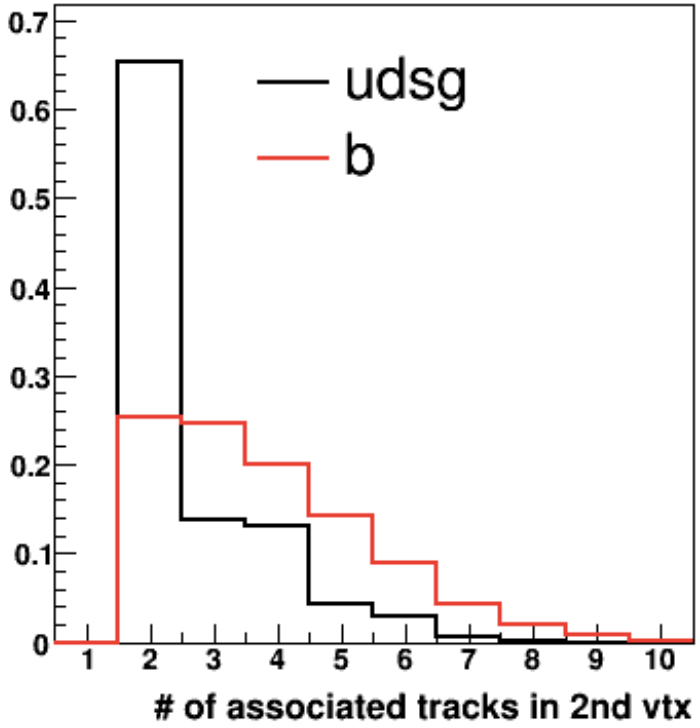


Additional udsg-jet rejection

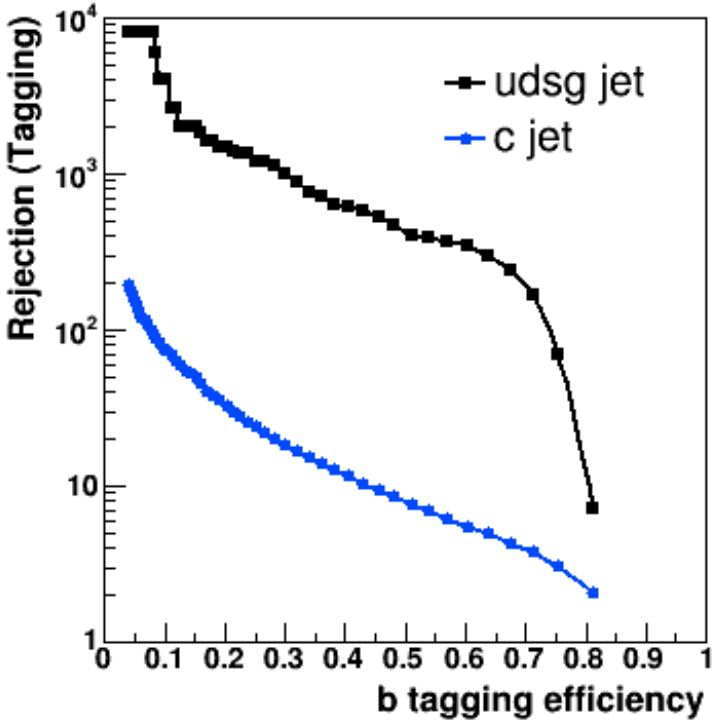
- MAPS+IT+TPC
  - run udsg/c/b-jets separately for this study
  - use Jin's tagging module

- Track quality (chi2/ndf<5) and min p_T (>0.5 GeV/c) cuts

# of associated tracks in 2nd vertex which deviation from prim. vertex > 2σ (before applying track cuts)



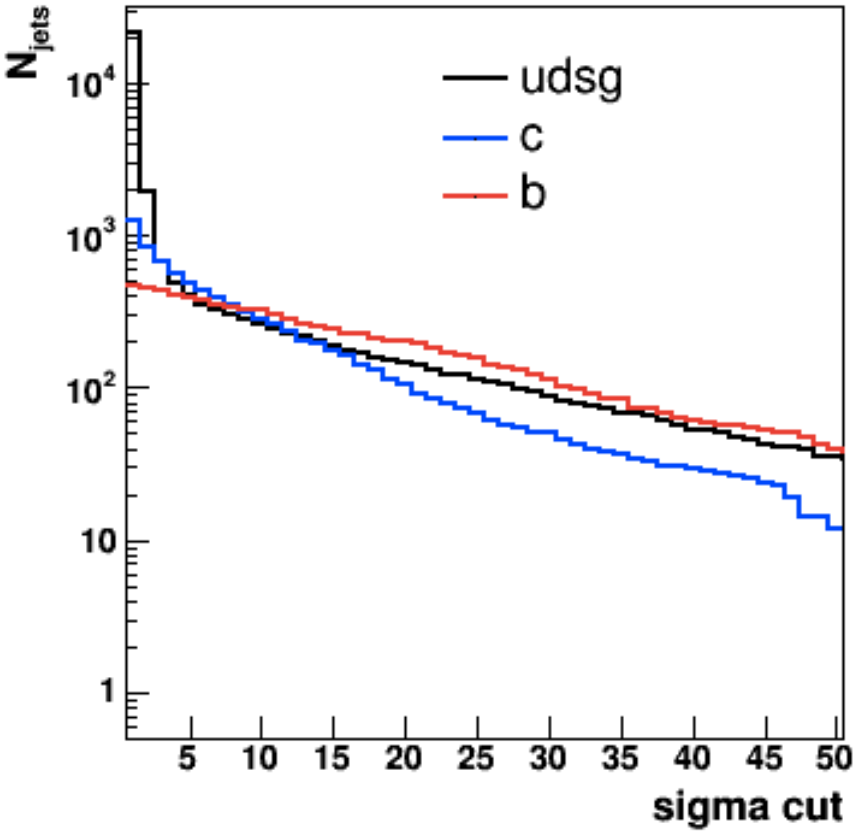
updated rejection vs. efficiency



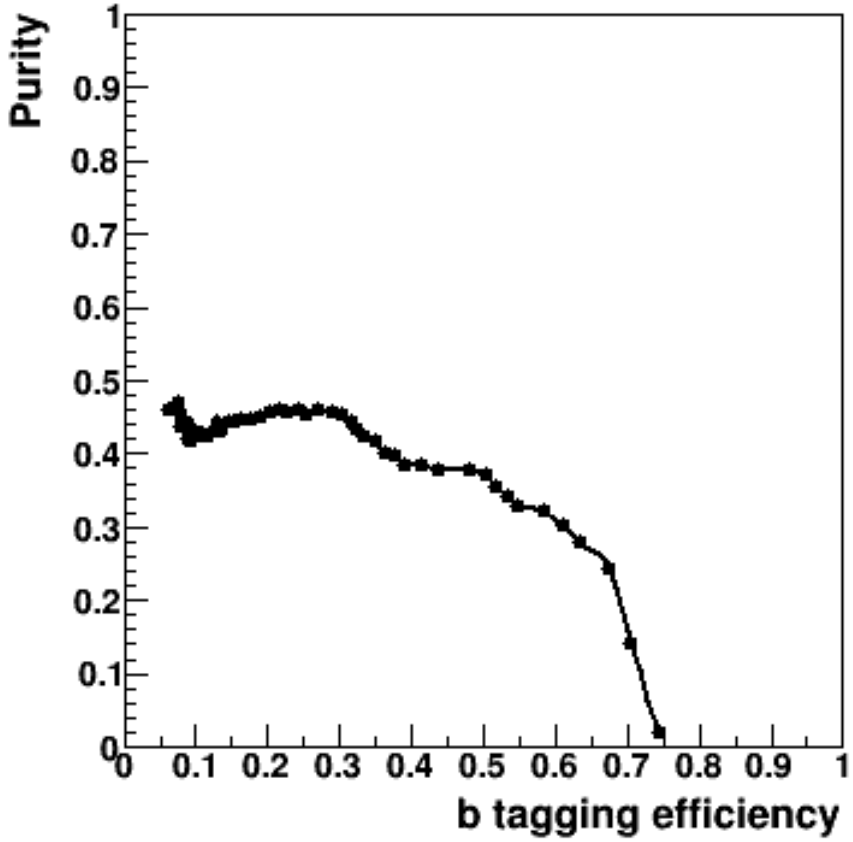
Purity vs. efficiency

- Running MB simulation w/ MAPS+IT+TPC
- Current plot from 1st round simulation (1.6 M) w/ MAPS+TPC
  - PYTHIA8, HardQCD:all, pTHatMin=10
  - R=0.4, Truth jet pT>20 GeV/c, |η|<0.6

# of jets after applying n sigma cut



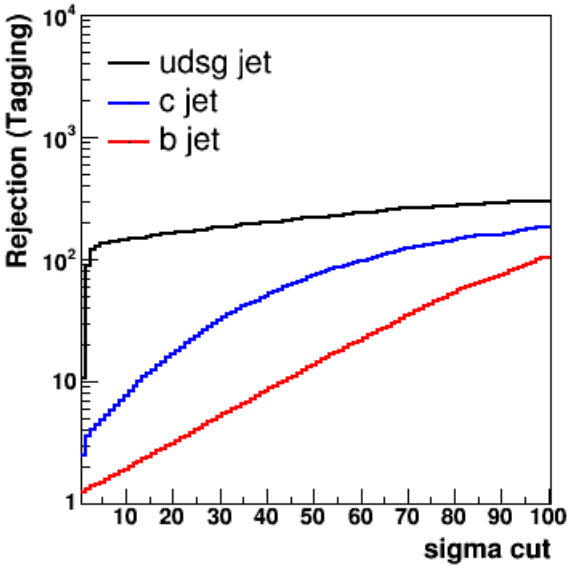
purity vs. efficiency

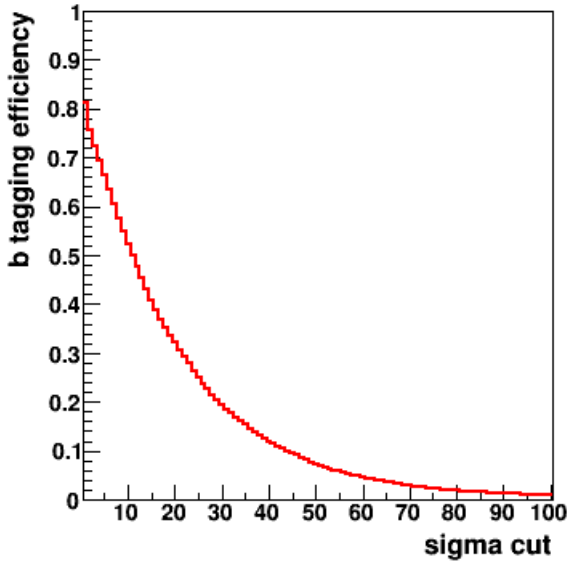


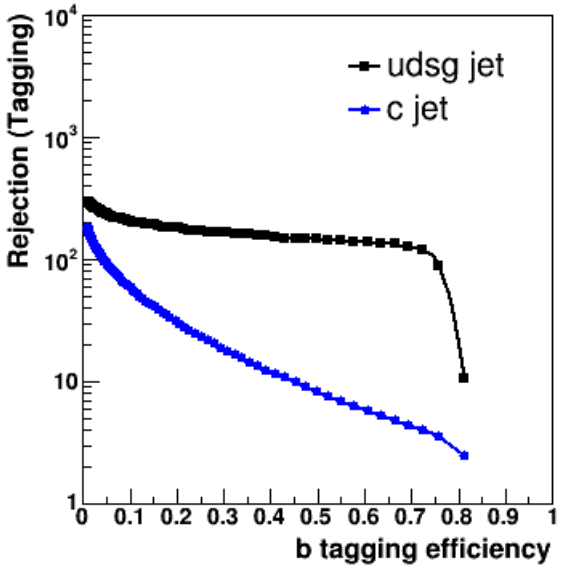
BACKUP

b-tagging efficiency

- Rejection (b-tagging efficiency) depending on ‘n’ sigma cut of deviation of secondary vertex
  - evaluate tagging efficiency w/ jets containing at least 1 reconstructed vertex
  - each reconstructed vertex should have at least 2 associated tracks







- To do
  - run MB simulation to evaluate purity vs. efficiency